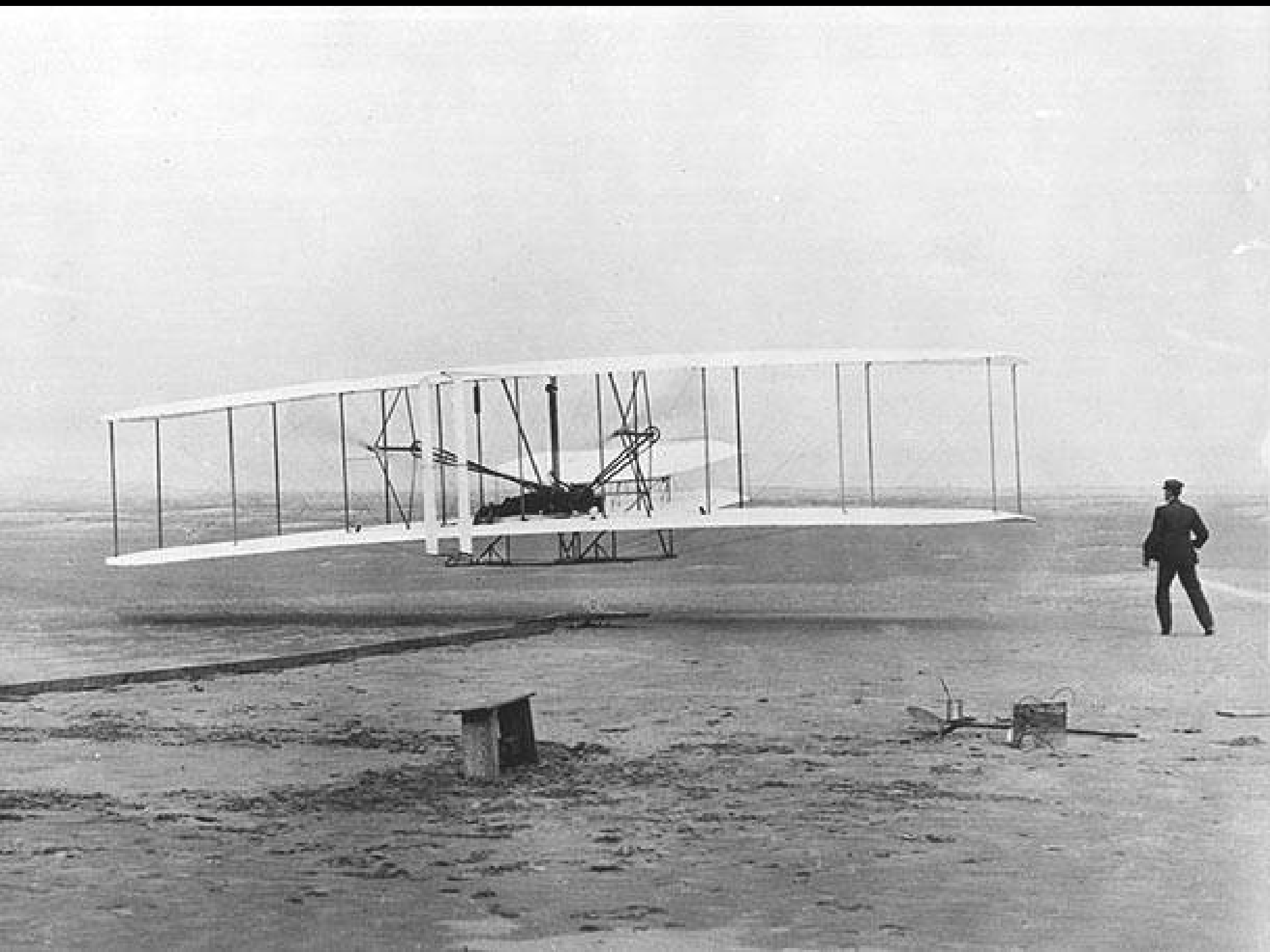
NEPA, Noise and the Super Hornet

Final Environmental Impact Statement (FEIS)
for the Introduction of F/A-18 E/F (Super Hornet) Aircraft
to the East Coast of the United States

Fred Pierson
Navy East Coast AICUZ/RAICUZ
Center of Excellence
NAVFAC Atlantic Division

7 April 2004



To Hampton Blvd
Naval Sta Piers
Naval Sta
GATES 3A & 3
EXIT ONLY
RIGHT
EXIT

FOR AN UNLIMITED ENGAGEMENT
DAY AND NIGHT - SEVEN DAYS A WEEK
The SOUND of OUTRAGE!
FLYING SOON OVER A NEIGHBORHOOD NEAR YOU !
YOU WILL NOT BE ABLE TO MISS IT !
LEARN HOW WE CAN STOP THIS OUTRAGE !
NO_OLF
http://www.AlbemarleCommunity.Net

NO
OLF
NO
OLF
NO
OLF

HELP I'm Being
NO OLF
TERRORIZED
By The NAVY

The Super Hornet

- **Latest version of the Hornet aircraft with state of the art mission capability**
- **West Coast Super Hornets are stationed in California at NAS Lemoore**

Timeline

2002
- **Draft EIS (DEIS) made available for public review**
- **DEIS Comment Period and Public Hearings**

July 2003
- **Final EIS (FEIS) released**

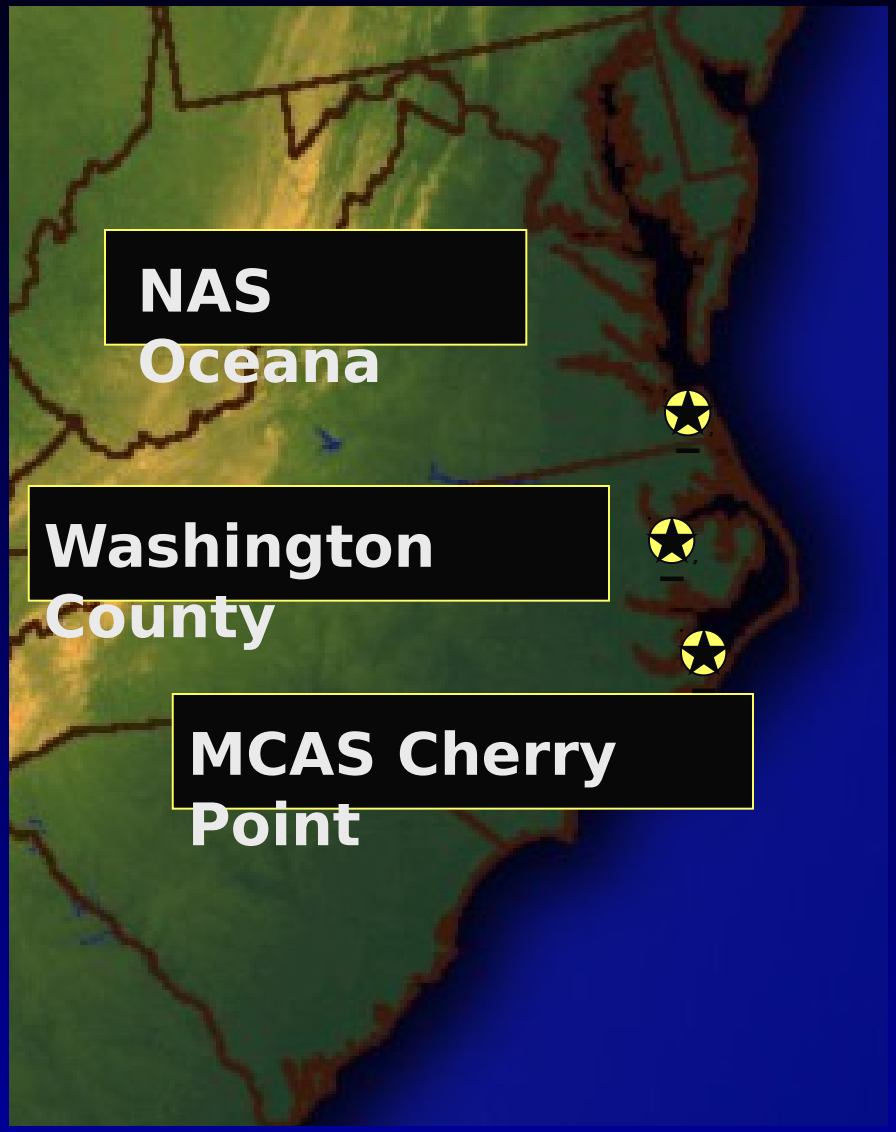
Sept 2003
- **Record of Decision**

Jan 2004
- **Lawsuits filed**

Proposed Action

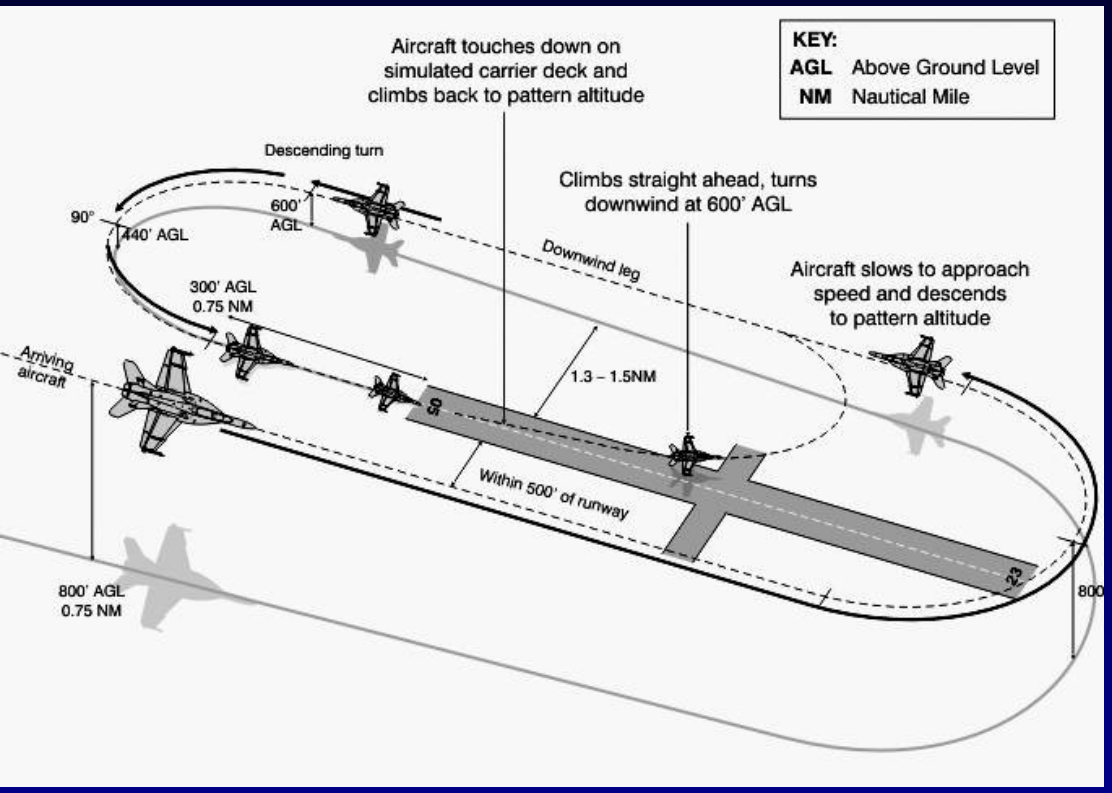
- **Provide facilities and functions to support the homebasing and operation of 10 Super Hornet fleet squadrons (120 aircraft) and the Fleet Replacement Squadron (24 aircraft)**

The Decision – Alternative 6



- **Majority of fleet aircraft based at NAS Oceana**
  - **Optimizes readiness**
  - **Utilize excess capacity**
- **Provides some noise and air quality mitigation**
- **Build an OLF in Washington County, NC**

Field Carrier Landing Practice - FCLP



- **Trains pilots for landing on aircraft carriers**
- **FCLP operations are conducted on a runway that simulates the aircraft carrier deck**

Proposed OLF in Washington County

- **8,000’ Runway**
- **3000 acre core area**
- **Total of about 30,000 acres within 60db DNL noise contours**
- **Rural County of 13,700 people**
- **30,000 Field Carrier Landing Practice patterns**

Washington County NC OLF Site

- **Easily accessible from NAS Oceana and MCAS Cherry Point**
- **Operationally ideal**
- **Low population density**
- **Compatible land use**
- **Lack of encroachment pressure**
- **Operational temp will be cyclic**
- **Wildlife refuge 5 miles away**

How to Present Noise Impacts?

- **Day-night average (DNL) noise contours**
- **Different resources impacted**
  - **Sometimes DNL is just not enough**
- **Augmented DNL with:**
  - **Noise equivalent sound level (Leq) for school days**
  - **Specific DNL for locations of interest**
  - **Sound Exposure Level (SEL) data**
  - **Onset-Rate Adjusted DNL (or Ldnmr)**
- **Detailed Noise Discussion and Appendix**
  - **Noise Science**
  - **Impacts of Noise**
  - **Additional backup data**

Noise Impacts

- **NAS Oceana - Increases population within the 65+ DNL contour by:**
  - **10,031 (11% increase from 2000 baseline)**
- **MCAS Cherry Point - Increases population within the 65+ DNL contour by:**
  - **202 (2% increase from 2000 baseline)**

Oceana/Fentress Alt 6 Noise Contours (w/ OLF)

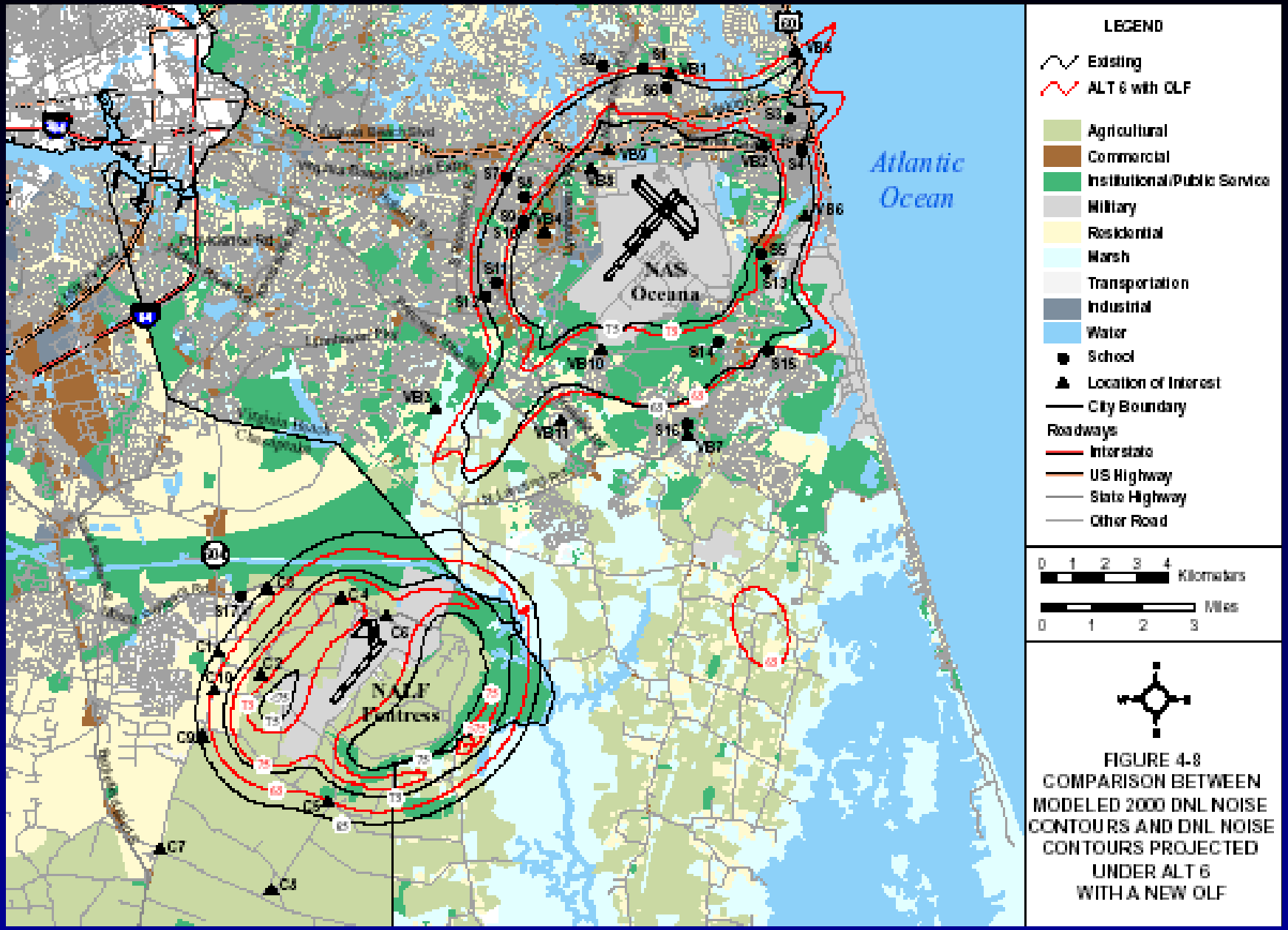


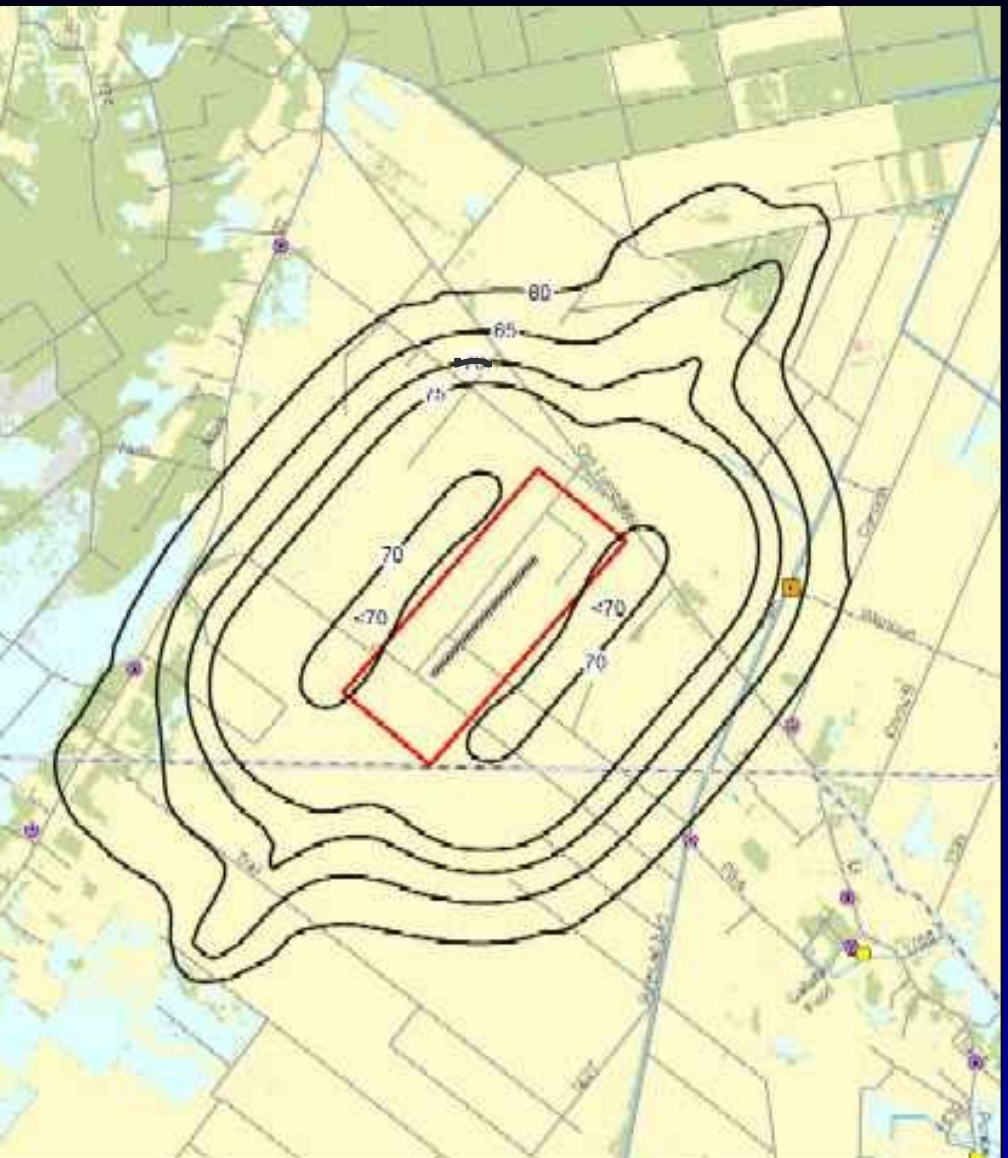
FIGURE 4-8
COMPARISON BETWEEN MODELED 2000 DNL NOISE CONTOURS AND DNL NOISE CONTOURS PROJECTED UNDER ALT 6 WITH A NEW OLF

Table 4-9 Off-Station Area (Acres) and Estimated Population within Projected Noise Zones at NAS Oceana and NALF Fentress under Dual-Siting Alternatives 4A and 4B

	Existing		ALT 4A without OLF		ALT 4A with OLF		ALT 4B without OLF		ALT 4B with OLF	
	Area	Pop.	Area	Pop.	Area	Pop.	Area	Pop.	Area	Pop.
65 to 70 dB	13,076	37,428	14,950	37,216	14,185	34,391	15,411	38,887	14,729	35,571
70 to 75 dB	9,151	26,752	9,980	29,035	9,698	28,899	10,192	29,396	9,809	29,435
75 dB or greater	12,462	23,349	15,916	32,863	10,212	31,552	16,331	33,987	11,158	32,917
Total	**34,689**	**87,529**	**40,846**	**99,114**	**34,095**	**94,842**	**41,934**	**102,270**	**35,696**	**97,923**
Net Change			**6,157**	**11,585**	**(594)**	**7,313**	**7,245**	**14,741**	**1,007**	**10,394**
Percent Net Change			**18%**	**13%**	**(2%)**	**8%**	**21%**	**17%**	**3%**	**12%**

Source: Wyle Laboratories, Inc., 2003.

Noise Zones – Site C (Washington County, NC)



- Flight Operations
  - 32,000 ops/year
- Noise Zones
  - 24,000 acres
- Population
  - 141 people

Population Within the 60 DNL Contour at the OLF Sites

Table 12-3 Estimated Population within Modeled Noise Zones at OLF Sites A, B, C, D, and E Under ALT 1 and ALT 3 for Site F

Proposed OLF Site	County	Noise Zone[a] 60-65	65-70	70-75	>75	Total Population by County	Total Population by Site
Site A	Perquimans	204	159	95	140	598	606
	Pasquotank	8	0	0	0	8	
Site B	Bertie	203	156	91	211	661	661
Site C[b]	Washington	60	23	15	26	124	141
	Beaufort	15	0	2	0	17	
Site D[c]	Hyde	74	48	9	0	131	131
Site E[b]	Craven	289	151	78	163	681	687
	Beaufort	4	2	0	0	6	
Site F	Burke	90	46	75	181	392	393
	Allendale	1	0	0	0	1	

Site Analysis - Noise Impacts

Increase or decrease in percentage of population within 65 DNL contour

Alternatives		Oceana		Cherry Pt		Beaufort	
Baseline		**87,529**		**8,713**		**4,934**	
1 Oceana		+20,838	**24%**				
	w/ OLF	+14,765	**17%**				
2 Cherry Point	w/ OLF	-23,487	**-27%**	+2,721	**31%**		
3 Beaufort	w/ OLF	-19,650	**-22%**	+766	**9%**	+1,139	**23%**
4A 6/4 Oceana/Cherry Pt		+11,585	**13%**		**0%**		
	w/ OLF	+7,313	**8%**	+791	**9%**		
4B 6/4 Oceana/ Beaufort		+14,741	**17%**			-149	**-3%**
	Beaufort OLF	+14,741	**17%**			-143	**-3%**
	Oceana OLF	+10,394	**12%**			-149	**-3%**
	Oceana OLF/Beaufort OLF	+10,394	**12%**			-143	**-3%**
5A 6/4 Cherry Pt/Oceana	w/ OLF	-11,649	**-13%**	+2,238	**26%**		
5B 6/4 Cherry Pt/Beaufort	Cherry Pt OLF	-19,650	**-22%**	+2,238	**26%**	-149	**-3%**
	Cherry Pt OLF/Beaufort OLF	-19,650	**-22%**	+2,238	**26%**	-143	**-3%**
6 8/2 Oceana/Cherry Pt		+16,759	**19%**	+228	**3%**		
	w/ OLF	+10,031	**11%**	+202	**2%**		

Site Specific DNL

- **Locations of interest**
  - Worked with local community to help identify
  - All public schools were included if in noise contours
- **Presented DNL value for each location**
- **Most people lived near a site chosen**
  - Able to get a good feel for how loud at their house
- **Criticism**
  - It’s an average

Table 4-18 Average Noise Levels Projected at Representative Other Locations of Interest Near NAS Oceana and NALF Fentress under Dual-Siting Alternatives 5A and 6[a]

Identification Number[b]/Name	Existing		ALT 5A		ALT 6 without OLF		ALT 6 with OLF	
	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)
Virginia Beach								
VB1 Virginia Beach Sentara Hospital	65	65	63	63	66	66	66	66
VB2 Virginia Beach Pavilion	76	76	75	74	79	78	79	78
VB3 Verizon/Virginia Beach Amphitheater	59	57	57	56	61	59	60	58
VB4 Lynnhaven Mall Shopping Center	79	77	79	76	82	80	82	80
VB5 Cavalier Hotel	63	63	61	62	64	64	65	64

Sound Exposure Level (SEL)

- **Sound exposure represents both intensity and duration of a sound**
  - **Net impact of an entire acoustic event**
- **Better represents what people will actually hear**
- **EIS provided SEL data for generic events and for top five events at each location of interest**
- **Criticisms**
  - **Very few**

Comparison of Representative SEL Values (dB) for Aircraft on Approach, Departure, and in the FCLP or Touch-and-Go Pattern

Operation	Alt. (AGL)	F-14A	F-14B/D	F/A-18C/D	F/A-18E/F	AV-8B	EA-6B
Approach	1,000	93	87	109	114	103	107
Departure	1,000	110	108	117	117	113	114
FCLP	1,000 800	93 96 99	95 97 99	108 109 111	113 115 117	- 103 107	- 103 106

Summary – Lessons Learned

- **DNL is a good metric and should be used**
- **Should consider augmenting DNL with other metrics such as Leq and SEL**
  - **Reader friendly**
  - **Go the extra mile**
- **Use good maps!**
- **Keep it simple**

The Way Ahead

2004 • First squadron Stands up

2005 • Construction of OLF begins

2007 • OLF complete

2010 • Homebasing complete

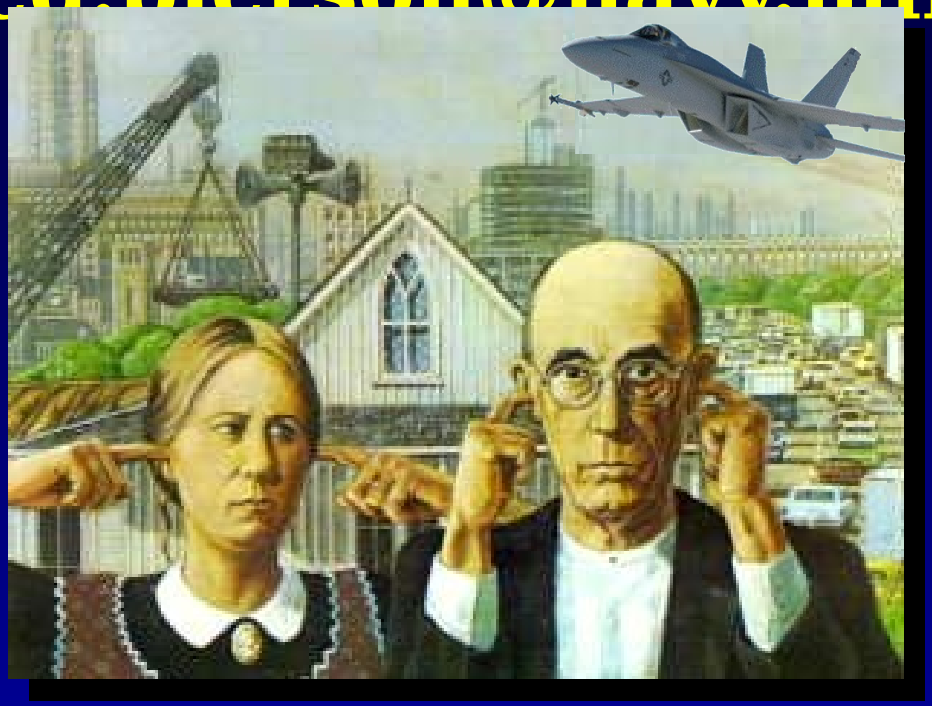
Fred Pierson

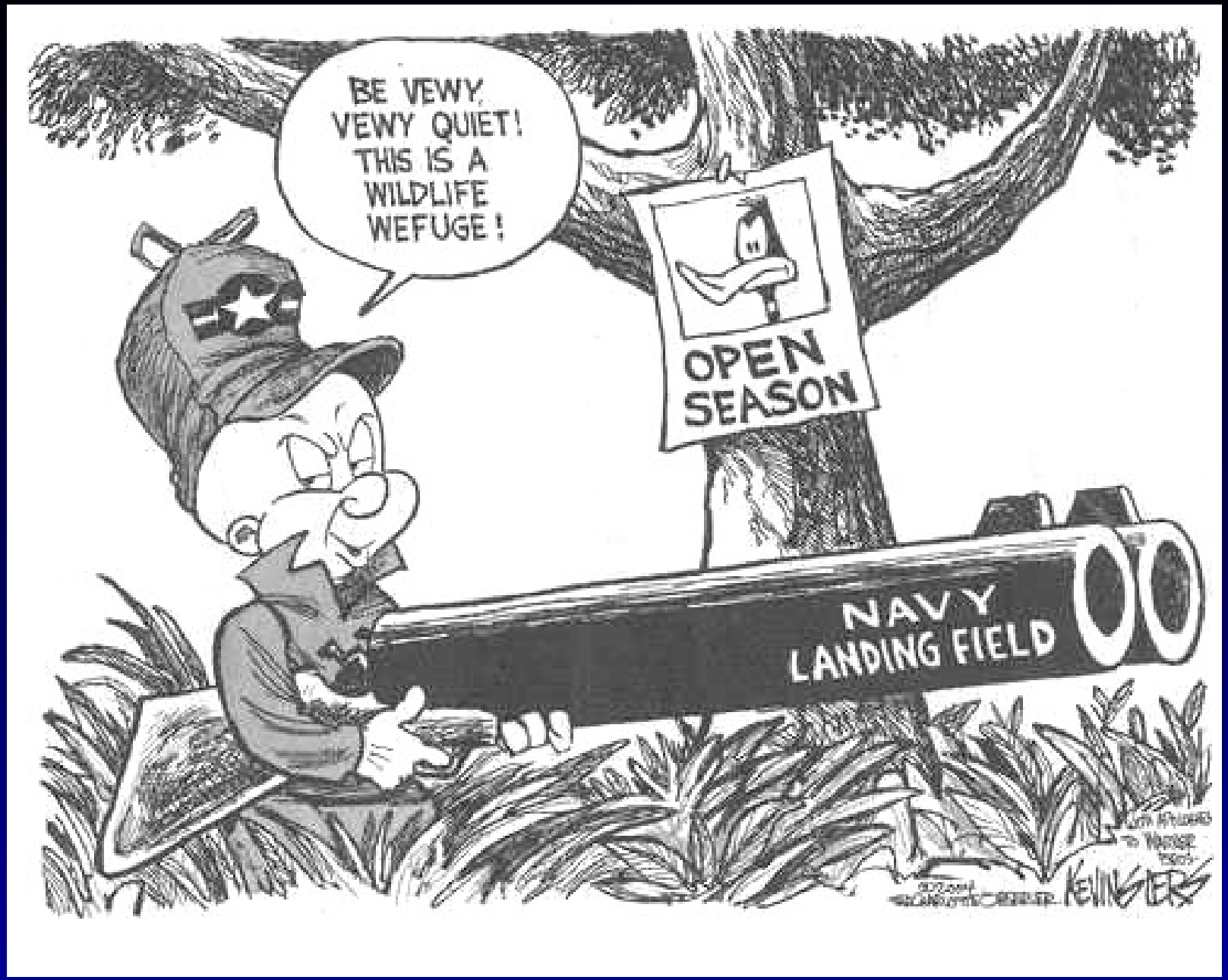
Navy East Coast

AICUZ/RAICUZ Center of Excellence

(757) 322-6450

fred.pierson@navy.mil




BE VEWY VEWY QUIET! THIS IS A WILDLIFE WEFUGE!
OPEN SEASON
NAVY LANDING FIELD